

Analysis on the Problems in Advertisement Sound Level

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Abstract. The study analyzed the loudness of commercial advertisement using the absolute sound level to induce the characteristics and problems in them. Most commercials applied excessive compress/limiter, so even a common dialogue had music approaching or exceeding climax loudness. This loudness problem will not be solved for a while, unless the on-going loudness competition is over.

Keywords: Advertisement, Absolute Sound Level

1 Introduction

When a song is played on a radio, if its sound level is lower than its neighbor, the sound can be buried. Therefore, people want to raise the sound pressure as much as possible. Due to the requests of clients, the 'sound pressure competition', so called, began to occur. Sometimes, people want to increase sound pressure with sacrificing the musicality of a song [1]. Especially the sound source for commercial advertisement is in the most serious condition, clients usually want to have higher loudness than others. Mastering engineer apply an abnormal compressor and limiter setting and often go as far as to distort/amplify the sound to 3000~4000Hz frequency range, which is the most sensitive frequency range to human.

In public TV and radio stations, audio engineers prevent drastic loudness difference during transmission using a limiter, but users are fully exposed to the loudness different issue while using audio contents in the internet. People often have to suddenly adjust loudness due to extremely loud commercial advertisement in the middle of audio contents and, afterward, need to increase loudness again to enjoy the audio contents.

2 Commercial Advertisement Sound Source

Sound source of commercial advertisement is a representative case of loudness imbalance problem. Especially, internet users have much more problems, because they are directly exposed to the contents. The energy characteristics of commercial

advertisement show radical differences according to the objectives of an advertisement, so it is more effective to analyze the problematic (or specific) case than average values.

Table 1 Measurement of 10 sound sources of internet commercial advertisements and absolute sound level difference among contents desired by users The absolute sound level [2] of advertisement sound source was 55.1dB(S). Loudness of actual contents (used by audience) ranged between 45 and 57dB(S). It is not normal that absolute sound level of advertisement sound source is similar with music sound source. Absolute sound level of music sound source was measured from the mixture of numerous musical instruments and voice over 3 minutes of play (centered by climax), but majority of advertisement sound source is within 30 seconds and voice is the main and sole sound.

Table 1. dB(S) of advertisement sound source and actual contents

Sound Source	dB(S)	Deviation [dB]
Cass	57.2	2.1
Gang Jung is excellent	54.4	-0.7
Naver App	55.1	0.0
iPad2	55.8	0.7
Love Bit	56.5	1.4
Chanteclair	54.4	-0.7
Coupang	55.1	0.0
Xylitol	53.7	-1.4
Bausch Lomb circle lens	54.8	-0.4
Galaxy S2 Eskimo	54.4	-0.7

[Average: 55.1dB(S), Maximum: 57.2dB(S), Standard Deviation: 1.1dB]

It is awkward for audience to see that absolute sound level of music’s climax section is similar with absolute sound level of voice in advertisement. For example, it is a case that loudness of voice is similar with the climax loudness of powerful metal music. Applying excessive compressor/limiter is inevitable to amplify the sound level of voice to the loudness level equal to a song’s climax.

The bigger problem is that the absolute loudness of actually used contents is generally small and the deviation is too big. Contents on internet have extremely deviated loudness depending on the wave form process. Especially, majority of contents are produced by an individual and use the natural wave form recorded through a recorder, therefore the absolute loudness is small. Moreover, all advertisement and commercial sound source go under substantial amount of compressor/limiter application. Consequently, it is inevitable to have a big difference in absolute loudness without artificially processing wave form.

Figure 1 is the wave forms of 3 single voice sections at the Naver App advertisement. Small wave forms at the middle are sound effects. Energy envelope at the voice section showed that compressor/limiter was applied at the criteria of a

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specific dBFS. Its absolute sound level is over 55dB(S) although it is a general dialogue section. The loudness level is close to the climax of recent music sound source and it is even higher than maximum absolute sound level of metal music sound source produced before 2000.

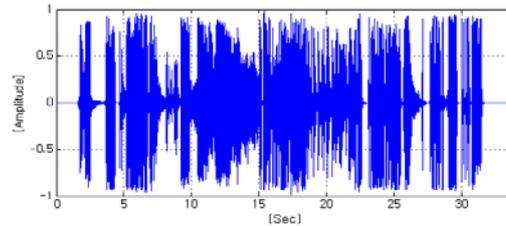


Fig. 1. Sectional wave form of 3 sentences in the Naver App advertisement

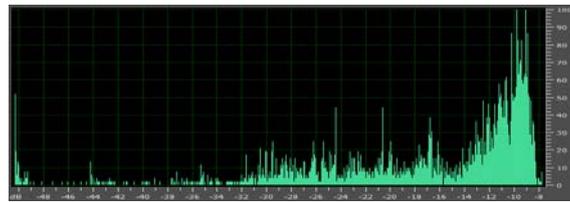


Fig. 2. Sectional energy distribution chart of 3 sentences in the Naver App advertisement

3 Conclusion

The study realized the current loudness balance problem using the absolute sound level index and indicated the fundamental problems. Especially, it is hard to apply the loudness recommendation of Dolby, ITU-R BS.1770-2 and others to advertisement sound source of internet media, which is directly delivered to audience, unlike the public broadcasting mastered by audio engineers before actual transmission. Moreover, we expect that the excessive loudness condition will persist in the future because advertisers will ask to have higher loudness than opponent advertisement.

References

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